
MASSACHUSETTS-AMERICAN WATER COMPANY
ASSESSMENT OF SERVICE COMPANY SERVICES

TEST YEAR ENDED JUNE 30, 2000

BARYENBRUCH & COMPANY

MASSACHUSETTS-AMERICAN WATER COMPANY EVALUATION OF SERVICE COMPANY SERVICES

TABLE OF CONTENTS

	<u>Page</u>
I - Introduction	1
Purpose of This Study	
Study Approach	
Study Results	
II - Background	3
Overview of Service Company Services	
Description of Service Company Expenses	
Assignment of Service Company Expenses to Operating Companies	
III - Cost Comparison	7
Methodology	
Description Of Service Company Hours/Expenses By Outside Provider Category	
Service Company Hourly Rates	
Outside Service Provider Hour Rates	
Service Company Versus Outside Provider Cost Comparison	
Other Cost Comparisons	
IV - Need For Services	23
Analysis of Services	
Controls Over Service Company Charges	

I - INTRODUCTION

PURPOSE OF THIS STUDY

This study was undertaken to answer two questions:

- What would be the economic impact on Massachusetts-American Water Company (Massachusetts-American) if it were to outsource the services that it now receives from American Water Works Service Company, Inc. (Service Company)?
- Are the services Massachusetts-American receives from the Service Company necessary?

STUDY APPROACH

The first issue was evaluated by comparing the cost per hour for work performed by Service Company personnel to the hourly billing rates that would be charged by outside providers of equivalent services. Service Company costs per hour were based on the costs and hours that were charged to Massachusetts-American during the twelve months ended June 30, 2000. Outside providers' billing rates came from surveys of professionals that could perform the services now provided by the Service Company.

The second issue—the necessity of Service Company services—was first investigated by determining what the Service Company does for Massachusetts-American. A determination was then made as to whether these services would be required if Massachusetts-American were a stand-alone utility.

STUDY RESULTS

Concerning issue 1, the following conclusions can be drawn from this study:

- On average, the hourly rates for outside service providers are **92% greater** (\$1,731,203/\$899,437) than the Service Company's hourly rates.
- The services performed by the Service Company are vital and could not be procured externally by Massachusetts-American without careful supervision on the part of Massachusetts-American. If these services were contracted entirely to outside providers, Massachusetts-American would have to add one more position to manage activities of the outside firms. This position would be essential to ensure a high level of quality service is being provided.

- If all the services now provided by the Service Company had been out-sourced during the June 30, 2000 test year, Massachusetts-American and its ratepayers would incur an additional **\$930,566** in annual expenses. This is more than **103% higher** (\$1,830,003/\$899,437) than the Service Company's total billings to Massachusetts-American during the year ended June 30, 2000.
- It would be difficult for Massachusetts-American to find local service providers with the same specialized water industry expertise as that possessed by the Service Company staff. Service Company personnel spend substantially all their time serving operating water companies. This specialization brings with it a unique knowledge of water utility operations and regulation that is most likely unavailable from local service providers.
- Service Company costs that cannot be charged directly to operating companies are allocated on the basis of number of customers. This is a straightforward and entirely reasonable methodology. The cost to administer this allocation technique is lower than alternatives that use multiple factors.
- Service Company fees do not include any profit markup. Only its actual cost of service is being recovered from Massachusetts-American ratepayers.

Concerning issue 2, the following conclusions can be drawn:

- Massachusetts-American could not function without the services that are provided to it by the Service Company. These services are the same type of activities that must be carried out by a stand-alone utility company to ultimately provide customers with service.
- There is no redundancy in the services provided by the Service Company and the activities that are performed by Massachusetts-American itself.

II - BACKGROUND

OVERVIEW OF SERVICE COMPANY SERVICES

The services that the Service Company provides to Massachusetts-American are described in the contract dated January 1, 1993 between the Service Company and Massachusetts-American Water Company. These services fall under the categories shown below, each of which is described in detail in the Service Agreement:

- Accounting
- Administration
- Communications
- Corporate Secretarial and Legal
- Engineering
- Financial
- Human Resources
- Information Systems
- Operations
- Rates and Revenue
- Risk Management
- Water Quality

During the test year, Massachusetts-American was provided services from the following Service Company locations:

- Corporate Office – Voorhees, New Jersey
- Regional Offices – New England Office (Hingham, Massachusetts), Northeast Office (Haddon Heights, New Jersey) and Regional Accounting Office (Marlton, New Jersey)
- Belleville Lab – Belleville, Illinois
- Data Centers – Haddon Heights, New Jersey and Richmond, Indiana.

The type of services that each Service Company location provides to Massachusetts-American are detailed later in Section IV of this report.

DESCRIPTION OF SERVICE COMPANY EXPENSES

The expenses of each Service Company location are categorized as follows:

- Labor - salaries of managerial, professional and technical employees
- Support - wages and salaries of office support personnel, including secretaries, clerks, telephone operators and mail clerks
- Overhead - employee benefit costs (payroll taxes, medical coverage, pensions, disability insurance) and other general expenses
- Office Expense - office rent, equipment leases, telephone, electric, office supplies, property taxes, office maintenance
- Vouchers/Journal Entries – (1) travel expenses incurred by Service Company personnel, (2) other items submitted for reimbursement by employees, including professional association dues and moving expenses and (3) outside service contracts for such things as actuarial services and (4) various other expenditures, including data center expenses for software licenses and hardware maintenance.

During the twelve months ended June 30, 2000, the Service Company billed Massachusetts-American \$899,437, as detailed below.

Charges For Year Ended June 30, 2000					
	Corporate Office	Regional Offices	Belleville Lab	Data Centers	Total
Payroll	\$ 54,359	\$ 291,491	\$ 10,147	\$ 10,897	\$ 366,894
Support	\$ 4,656	\$ 41,185	\$ 1,908	\$ -	\$ 47,750
Overhead	\$ 25,259	\$ 121,433	\$ 9,317	\$ 3,660	\$ 159,669
Office Expense	\$ 30,556	\$ 167,558	\$ 4,971	\$ 9,864	\$ 212,950
Vouchers/JEs	\$ 49,177	\$ 47,590	\$ 4,638	\$ 10,769	\$ 112,174
Total	\$ 164,008	\$ 669,257	\$ 30,981	\$ 35,191	\$ 899,437

ASSIGNMENT OF SERVICE COMPANY EXPENSES TO OPERATING COMPANIES

Service Company expenses are either assigned directly or allocated to operating companies. Direct assignment occurs when Service Company work or expenses are incurred in support of only one operating company. Direct assignment examples include work in support of an operating company's rate case, engineering design work on an operating company's project and the preparation of an operating company's financial statements.

Service Company expenses are allocated when more than one operating company benefit from the underlying work. Examples include assessments of new Federal water quality regulations, development of the company-wide materials procurement contracts, creation of company-wide engineering design standards. These costs are allocated to operating companies based on number of customers.

As shown in the table below, expense categories may be direct and/or allocated:

Expense Category	Direct	Allocated	Comments
Labor	x	x	Professional personnel working for one or several operating companies
Support		x	Administrative personnel support the professional staff, thus support costs are allocated on the basis of professional labor
Overhead	x	x	These are primarily employee benefit costs that relate directly to labor
Office Expense		x	Are all allocated on the basis of professional labor
Vouchers/Journals	x	x	May be either directly in support of one operating company (e.g., an engineer traveling from the Corporate Office to the operating company) or allocated to several operating companies

The Service Company's time reporting process enables labor and support charges to be assigned to the proper operating company. Labor charges are based on the reporting of time by managerial, professional and technical Service Company employees. Every week, Service Company professional employees complete a time sheet that shows hours spent by day by:

- Type of service/activity (e.g., rate case data requests),
- Operating company (for direct charge) or allocation formula (for allocation), and
- Work order/authorization number (where applicable).

At month-end, time report information is processed with direct and allocated professional labor hours tabulated for each operating company. Dollar charges are then calculated using the hourly rate of each Service Company professional employee based upon their base salary (i.e., an employee's hours times their hourly rate of pay).

Administrative (support) personnel charge their time to the activity "General Admin." As described in the table above, their labor charges are allocated to operating companies based upon how their office's professional personnel labor charges are assigned. For instance, if 20% of the New England Regional Office's professional labor was assigned to Massachusetts-American during a month, then the 20% of

the Corporate Office's administrative labor charges are also assigned to Massachusetts-American.

The overhead cost category is allocated based on professional and administrative labor costs. Overhead charges to Massachusetts-American during the June 30, 2000 test year averaged around 38.5%. Thus, during this test for every \$1.00 of professional and administrative labor charges, another \$.385 was added to allow the Service Company to recover employee benefit-related costs.

Each Service Company location's office expenses are allocated to operating companies based upon how professional labor charges for that office have been assigned. Using the previous example of the New England Regional Office (which had 20% of professional labor assigned to Massachusetts-American) 20% of that office's office expenses would be assigned to Massachusetts-American. Thus, office expenses are allocated in the very same way as administrative labor.

Vouchers/Journal Entries may be charged directly or allocated, depending on who benefits from the expenditure. For instance, the cost of a continuing professional education course taken by an accountant in a regional office is allocated to the operating companies served by that office. Travel expenses by that same accountant to a state rate case proceeding are charged directly to the operating company whose case is being heard.

Before 1989, the allocation of costs to operating companies was based on a multitude of factors (e.g., number of employees, dollar amount of net plant in service). The Company found this methodology difficult to administer and difficult to explain to regulators. As a result, a decision was made in 1989 to rely solely on number of customers as the basis for allocation and the affiliate agreement was so modified. Number of customers is an entirely appropriate basis for allocating those Service Company charges primarily because it is the most equitable to the customer, it is straightforward, easily understood and is relatively inexpensive to administer. Also, this methodology reasonably reflects how Service Company costs that cannot be directly assigned are incurred.

III - COST COMPARISON

METHODOLOGY

The cost comparison quantifies the economic impact on Massachusetts-American of outsourcing all the services it now receives from the Service Company. This is accomplished by comparing the cost per hour for Service Company services to those of outside service providers to whom these duties could be assigned.

The first step was to determine which types of outside providers could assume Service Company services. Based on the nature of these services it was determined that the following outside service providers could perform the categories of services indicated.

- Management Consultants - executive and administrative management, risk management services, human resources and communications services
- Attorneys - corporate secretarial and legal services
- Certified Public Accountants - accounting, financial, information systems and rates and revenues
- Professional Engineers - engineering, operations and water quality services.

It should be noted that the services provided by the Belleville lab are assumed to be transferable to professional engineers for purposes of this cost comparison. This was done for two reasons. First, there is no readily available survey of hourly billing rates for outside professionals that perform the types of services provided by Belleville. Second, Belleville personnel have similar educational backgrounds as Service Company engineering personnel. In fact, many Belleville employees have engineering degrees. Thus, it is valid to compare the hourly rates of Belleville services to those of outside engineering firms.

The next step was to calculate the Service Company's hourly rate for each of the four outside service provider categories, based on the fees and hours charged to Massachusetts-American during the test year.

Hourly billing rates for outside service providers were next determined using information from pertinent surveys.

Finally, the Service Company's average cost per hour was compared to the average cost per hour for outsider providers to determine who provided services at a lower cost.

COMPILATION OF SERVICE COMPANY HOURS/EXPENSES BY OUTSIDE PROVIDER CATEGORY

During the twelve months ended June 30, 2000, Service Company employees charged 16,616 hours of time to Massachusetts-American. As indicated previously, the Service Company billed Massachusetts-American \$899,437 during that same period.

Certain adjustments to these dollar and hour amounts are necessary to calculate Service Company hourly rates that are directly comparable to those of outside providers. These adjustments are described below.

- Support – This expense category includes the cost of Service Company administrative/secretarial staff. To include these dollars and hours in the calculation would understate the Service Company's hourly rate relative to outside providers. Outside service providers charge separately for their administrative staff (e.g., attorney's paralegals). The total for this item is \$47,750 and 2,697 hours.
- Travel Expenses – Within the Vouchers/Journal Entries expense category are \$14,163 in travel expenses for Service Company personnel. Outside service providers bill this to a client in addition to their hourly fees. Thus, it is appropriate to remove this amount from the Service Company hourly rate calculation.
- Computer Hardware/Software Expenses – Also within the Vouchers/Journal Entries expense category are \$9,735 in hardware/software lease and maintenance fees paid to outside companies such as IBM. Here too, an outside provider would bill this expense directly to a client at the actual incurred cost rather than recover them in their hourly rates.
- Fees Of Existing Outside Service Providers - The test year includes \$8,715 fees paid by the Service Company to outside professional firms retained to perform certain corporate-wide services (e.g., financial audit, actuarial services). These professional fees are excluded because the related services have effectively been out-sourced already. These expenses are all in the Vouchers/Journal Entries expense category.

The analysis below summarizes which test year expenses and hours are included in the Service Company hourly rate calculation.

	Total Service Company Charges	Excluded From Hourly Rate Calculation	Included In Hourly Rate Calculation
<u>Fees</u>			
Payroll	\$ 366,894		\$ 366,894
Support	\$ 47,750	\$ (47,750)	\$ -
Overhead	\$ 159,669		\$ 159,669
Office Expense	\$ 212,950		\$ 212,950
Vouchers/JEs	\$ 112,174	\$ (32,613)	\$ 79,561
Total Fees	\$ 899,437	\$ (80,363)	\$ 819,074
<u>Hours</u>	16,617	(2,697)	13,920

Schedule 1 presents the assignment of total test year Service Company expenses and hours to outsider provider categories. Schedule 2 analyzes how travel expenses are split among the four outside provider categories.

SERVICE COMPANY HOURLY RATES

Based on the assignment of expenses and hours shown in Schedule 1, the Service Company's equivalent costs per hour for the test year ended June 30, 2000 are calculated below.

	Management Consultant	Attorney	Certified Public Accountant	Professional Engineer	Total
Total expenses (Sch 1)	\$ 257,242	\$ 8,762	\$ 390,686	\$ 242,747	\$ 899,437
Less: support expenses (Sch 2)	\$ (16,354)	\$ (339)	\$ (7,744)	\$ (23,314)	\$ (47,750)
Less: travel expenses (Sch 3)	\$ (4,694)	\$ (31)	\$ 22	\$ (9,461)	\$ (14,163)
Less: computer hw/sw (Sch 3)			\$ (9,735)		\$ (9,735)
Less: prof svcs fees (Sch 3)	\$ (3,009)		\$ (5,705)		\$ (8,715)
Net expenses (A)	\$ 233,185	\$ 8,392	\$ 367,524	\$ 209,973	\$ 819,074
Total hours (Sch 1)	3,948	76	8,552	4,041	16,617
Less: support hours (Sch 2)	(892)	(19)	(458)	(1,328)	(2,697)
Net hours (B)	3,056	57	8,095	2,713	13,920
Average rate/hour (A / B)	\$ 76	\$ 147	\$ 45	\$ 77	

**Massachusetts-American Water Company
Test Year Service Company Charges (Year Ended June 30, 2000) - Total**

Service Company Work And Charges					Outside Service Provider To Whom Work Would Be Assigned							
Account Number	AWW Office	Work Description	Total		Mgmt Consultant		Attorney		Certified Public Acct		Prof Engineer	
			Charges	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours
107	Corporate	CWIP	\$ 44,863	776							\$ 44,863	776
107	Corporate	Implemen. of ORCOM Software 60-00	\$ 1,576	9					\$ 1,576	9		
183.01	Corporate	Customer Service Consolidation Project	\$ 367	2	\$ 367	2						
183.02	Corporate	Financial Services Project	\$ 47	0					\$ 47	0		
426.29	Corporate	Other Income Deductions (61-00)	\$ 0	-					\$ 0	-		
642.3	Corporate	Water Quality Lab	\$ 30	0							\$ 30	0
642.3	Corporate	Water Quality System	\$ 3,420	29							\$ 3,420	29
903.51	Corporate	I. S. /Customer Billing	\$ 0	-					\$ 0	-		
923.1	Corporate	Accounting	\$ 10,072	135					\$ 10,072	135		
923.1	Corporate	Administrative	\$ 13,777	101	\$ 13,777	101						
923.1	Corporate	Administrative/Internal Audit	\$ 4,974	102					\$ 4,974	102		
923.1	Corporate	Communications	\$ 1,686	14	\$ 1,686	14						
923.1	Corporate	Corporate Secretarial	\$ 1,775	10			\$ 1,775	10				
923.1	Corporate	Engineering	\$ 125	-							\$ 125	-
923.1	Corporate	Financial	\$ 3,194	49					\$ 3,194	49		
923.1	Corporate	Human Resources	\$ 18,495	126	\$ 18,495	126						
923.1	Corporate	Information Systems/Financial	\$ 54,979	610					\$ 54,979	610		
923.1	Corporate	Rates and Revenue	\$ -	-								
923.1	Corporate	Water Quality - Regional	\$ -	-								
923.19	Corporate	Liaison W/Outside Agencies	\$ 46	1			\$ 46	1				
923.19	Corporate	Standard Contract Update	\$ 86	2			\$ 86	2				
926.21	Corporate	Personal Develop Education Costs	\$ 323	2	\$ 323	2						
930.39	Corporate	Early Warning & Source Water Monitoring Systems	\$ 12	0							\$ 12	0
930.39	Corporate	Evaluation of Wastewater (Surface Waters)	\$ 106	1							\$ 106	1
930.39	Corporate	Filter Media Specifications, Opt of Backwashing BioFilter	\$ 13	0							\$ 13	0
930.39	Corporate	Full-Scale Evaluation of Ultraviolet Technology	\$ 36	1							\$ 36	1
930.39	Corporate	Manganese Control & Permanganate Monitoring	\$ 32	1							\$ 32	1
930.39	Corporate	Occurrence and Control of Mycobacte	\$ 298	0							\$ 298	0
930.39	Corporate	Pathogen Intrusion into Distr System	\$ 103	0							\$ 103	0
930.39	Corporate	Research & Tech Development General Program	\$ 2,741	59							\$ 2,741	59
930.39	Corporate	Study of Water Quality Improvements	\$ 98	1							\$ 98	1
930.39	Corporate	Variability of Pathogen Concentration	\$ 647	0							\$ 647	0
930.39	Corporate	Virus Detection in Ground Water	\$ 86	0							\$ 86	0
183.01	Haddon Height IS	Customer Service Consolidation Project	\$ 42	1	\$ 42	1						
903.51	Haddon Height IS	I. S. /Customer Billing	\$ 7,819	49					\$ 7,819	49		
923.1	Haddon Height IS	Administrative	\$ 1,486	30	\$ 1,486	30						
923.1	Haddon Height IS	Information Systems/Financial	\$ 7,366	165					\$ 7,366	165		
923.1	Western	Accounting	\$ (41)	-					\$ (41)	-		
923.1	Western	Financial	\$ 84	3					\$ 84	3		
923.1	Western	Human Resources	\$ -	1	\$ -	1						

**Massachusetts-American Water Company
Test Year Service Company Charges (Year Ended June 30, 2000) - Total**

Service Company Work And Charges					Outside Service Provider To Whom Work Would Be Assigned							
Account Number	AWW Office	Work Description	Total		Mgmt Consultant		Attorney		Certified Public Acct		Prof Engineer	
			Charges	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours
107	Northeast Region	CWIP	\$ 10,201	174							\$ 10,201	174
186	Northeast Region	CWIP	\$ 626	21							\$ 626	21
903.51	Northeast Region	I. S. /Customer Billing	\$ 4,061	-					\$ 4,061	-		
923.1	Northeast Region	Administrative	\$ 11,550	120	\$ 11,550	120						
923.1	Northeast Region	Corporate Secretarial	\$ 71	2			\$ 71	2				
923.1	Northeast Region	Engineering	\$ 308	6							\$ 308	6
923.1	Northeast Region	Human Resources	\$ 574	12	\$ 574	12						
923.1	Northeast Region	Rates and Revenue	\$ 872	16					\$ 872	16		
107	Region	CWIP	\$ 25,427	269							\$ 25,427	269
107	Region	JD Edwards Software implementation	\$ 373	4					\$ 373	4		
183.01	Region	Customer Svc Consolidation Project	\$ 58	1	\$ 58	1						
923.1	Region	I. S. /Customer Billing	\$ 9	-					\$ 9	-		
923.1	Region	Accounting	\$ 130,124	3,269					\$ 130,124	3,269		
923.1	Region	Administrative	\$ 19,546	160	\$ 19,546	160						
923.1	Region	Administrative /Internal Audit	\$ 4	-					\$ 4	-		
923.1	Region	Corporate Secretarial	\$ 6,783	61			\$ 6,783	61				
923.1	Region	Engineering	\$ 4,214	59							\$ 4,214	59
923.1	Region	Financial	\$ 21,587	287					\$ 21,587	287		
923.1	Region	Information Systems/Financial	\$ 8	-					\$ 8	-		
923.1	Region	Rate and Revenue	\$ 9,665	164					\$ 9,665	164		
923.1	Region	Risk Management	\$ 6,651	59	\$ 6,651	59						
923.1	Region	Water Quality - Regional	\$ 9,041	116							\$ 9,041	116
903.51	Richmond Data Center	I. S. /Customer Billing	\$ 7,309	71					\$ 7,309	71		
923.1	Richmond Data Center	Information Systems/Financial	\$ 11,105	102					\$ 11,105	102		
923.1	New England	Accounting	\$ 115,479	3,516					\$ 115,479	3,516		
923.1	New England	Administrative	\$ 136,568	2,596	\$ 136,568	2,596						
923.1	New England	Human Resources	\$ 46,074	721	\$ 46,074	721						
923.1	New England	Operation	\$ 109,338	1,901							\$ 109,338	1,901
642.3	Belleville Lab	Water Quality Lab	\$ 25,821	486							\$ 25,821	486
903.51	Belleville Lab	I. S. /Customer Billing	\$ 0	-					\$ 0	-		
930.39	Belleville Lab	Changes in Biostability(surface Wat	\$ 36	1							\$ 36	1
930.39	Belleville Lab	Cryptosporidium (76-01)	\$ 659	11							\$ 659	11
930.39	Belleville Lab	Enhanced Coagulation Practices	\$ 4	-							\$ 4	-
930.39	Belleville Lab	Enhanced Solids Contact Clarification	\$ 2	-							\$ 2	-
930.39	Belleville Lab	Evaluation of Washwater (Surface Waters)	\$ 0	-							\$ 0	-
930.39	Belleville Lab	Occurrence and Control of Mycobacte	\$ (243)	5							\$ (243)	5
930.39	Belleville Lab	Pathogen Intrusion into Distr System	\$ 171	21							\$ 171	21
930.39	Belleville Lab	Research & Technology Development-Gen Program	\$ 4,265	79							\$ 4,265	79
930.39	Belleville Lab	Study of Water Quality Improvements	\$ 136	3							\$ 136	3
930.39	Belleville Lab	Variability of Pathogen Concentrations	\$ 599	15							\$ 599	15
930.39	Belleville Lab	Virus Detection in Ground Water	\$ (469)	6							\$ (469)	6
107	Hershey Data Center	Implemen. of ORCOM Software 60-00	\$ 18	0					\$ 18	0		
183.01	Hershey Data Center	Customer Svc Consolidation Project	\$ 46	1	\$ 46	1						
Total Service Company Expenses and Hours			\$ 899,436	16,616	\$ 257,242	3,948	\$ 8,762	76	\$ 390,686	8,552	\$ 242,747	4,041

Massachusetts-American Water Company
Test Year Service Company Charges (Year Ended June 30, 2000) – Support Expenses

Service Company Work And Charges					Outside Service Provider To Whom Work Would Be Assigned							
Account Number	AWW Office	Work Description	Total Charges	Hours	Mgmt Consultant		Attorney		Certified Public Acctnl		Prof Engineer	
					Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours
107	Corporate	CWIP	\$ 1,654.61	104.9							\$ 1,654.61	104.9
107	Corporate	Implemen. of ORCOM Software 60-00	\$ 30.50	1.8					\$ 30.50	1.8		
183.01	Corporate	Customer Service Consolidation Project	\$ 3.89	0.3	\$ 3.89	0.3						
183.02	Corporate	Financial Services Project	\$ 1.47	0.1					\$ 1.47	0.1		
642.3	Corporate	Water Quality Lab	\$ 0.20	0.0							\$ 0.20	0.0
642.3	Corporate	Water Quality System	\$ 116.41	7.3							\$ 116.41	7.3
923.1	Corporate	Accounting	\$ 330.97	20.6					\$ 330.97	20.6		
923.1	Corporate	Administrative	\$ 438.54	27.5	\$ 438.54	27.5						
923.1	Corporate	Administrative/Internal Audit	\$ 170.47	10.6					\$ 170.47	10.6		
923.1	Corporate	Communications	\$ 43.05	2.6	\$ 43.05	2.6						
923.1	Corporate	Corporate Secretarial	\$ 51.95	3.2			\$ 51.95	3.2				
923.1	Corporate	Financial	\$ 108.50	6.8					\$ 108.50	6.8		
923.1	Corporate	Human Resources	\$ 346.10	21.6	\$ 346.10	21.6						
923.1	Corporate	Information Systems/Financial	\$ 1,189.67	73.9					\$ 1,189.67	73.9		
923.19	Corporate	Liaison W/Outside Agencies	\$ 1.86	0.1			\$ 1.86	0.1				
923.19	Corporate	Standard Contract Update	\$ 3.43	0.2			\$ 3.43	0.2				
926.21	Corporate	Personal Develop Education Costs	\$ 7.07	0.4	\$ 7.07	0.4						
930.39	Corporate	Early Warning & Source Water Monitoring Systems	\$ 0.44	0.0							\$ 0.44	0.0
930.39	Corporate	Evaluation of Wastewater (Surface Waters)	\$ 3.86	0.2							\$ 3.86	0.2
930.39	Corporate	Filter Media Specs, Opt of Backwashing BioFilter	\$ 0.51	0.0							\$ 0.51	0.0
930.39	Corporate	Full-Scale Evaluation of Ultraviolet Technology	\$ 1.36	0.1							\$ 1.36	0.1
930.39	Corporate	Manganese Control & Permanganate Monitoring	\$ 1.26	0.1							\$ 1.26	0.1
930.39	Corporate	Occurrence and Control of Mycobacte	\$ 0.31	0.0							\$ 0.31	0.0
930.39	Corporate	Pathogen Intrusion into Distr System	\$ 1.46	0.1							\$ 1.46	0.1
930.39	Corporate	Research & Tech Development General Program	\$ 144.54	9.0							\$ 144.54	9.0
930.39	Corporate	Study of Water Quality Improvements	\$ 3.07	0.2							\$ 3.07	0.2
930.39	Corporate	Variability of Pathogen Concentration	\$ 0.52	0.0							\$ 0.52	0.0
930.39	Corporate	Virus Detection in Ground Water	\$ 0.34	0.0							\$ 0.34	0.0
923.1	Western	Financial	\$ 4.14	0.3					\$ 4.14	0.3		
923.1	Western	Human Resources	\$ 1.45	0.1	\$ 1.45	0.1						
107	Northeast Region	CWIP	\$ 946.70	55.4							\$ 946.70	55.4
186	Northeast Region	CWIP	\$ 54.08	3.2							\$ 54.08	3.2
923.1	Northeast Region	Administrative	\$ 719.91	41.3	\$ 719.91	41.3						
923.1	Northeast Region	Corporate Secretarial	\$ 8.29	0.4			\$ 8.29	0.4				
923.1	Northeast Region	Engineering	\$ 34.19	1.9							\$ 34.19	1.9
923.1	Northeast Region	Human Resources	\$ 72.02	4.1	\$ 72.02	4.1						
923.1	Northeast Region	Rates and Revenue	\$ 73.32	4.3					\$ 73.32	4.3		

Massachusetts-American Water Company
Test Year Service Company Charges (Year Ended June 30, 2000) – Support Expenses

Service Company Work And Charges					Outside Service Provider To Whom Work Would Be Assigned							
Account Number	AWW Office	Work Description	Total		Mgmt Consultant		Attorney		Certified Public Acctnt		Prof Engineer	
			Charges	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours
107	Region	CWIP	\$ 977.17	56.1							\$ 977.17	56.1
107	Region	JD Edwards Software implementation	\$ 7.32	0.4					\$ 7.32	0.4		
183.01	Region	Customer Service Consolidation Project	\$ 1.50	0.1	\$ 1.50	0.1						
923.1	Region	Accounting	\$ 4,463.38	261.5					\$ 4,463.38	261.5		
923.1	Region	Administrative	\$ 899.50	50.8	\$ 899.50	50.8						
923.1	Region	Corporate Secretarial	\$ 273.31	15.5			\$ 273.31	15.5				
923.1	Region	Engineering	\$ 227.84	12.5							\$ 227.84	12.5
923.1	Region	Financial	\$ 937.02	52.9					\$ 937.02	52.9		
923.1	Region	Rate and Revenue	\$ 427.10	24.3					\$ 427.10	24.3		
923.1	Region	Risk Management	\$ 187.32	10.7	\$ 187.32	10.7						
923.1	Region	Water Quality - Regional	\$ 504.06	28.9							\$ 504.06	28.9
923.1	New England	Administrative	\$ 13,633.65	732.7	\$ 13,633.65	732.7						
923.1	New England	Operation	\$ 16,732.14	911.1							\$ 16,732.14	911.1
642.3	Belleville Lab	Water Quality Lab	\$ 1,476.83	106.5							\$ 1,476.83	106.5
930.39	Belleville Lab	Changes in Biostability(surface Wat	\$ 3.40	0.3							\$ 3.40	0.3
930.39	Belleville Lab	Cryptosporidium (76-01)	\$ 36.77	2.6							\$ 36.77	2.6
930.39	Belleville Lab	Occurrence and Control of Mycobacte	\$ 16.26	1.1							\$ 16.26	1.1
930.39	Belleville Lab	Pathogen Intrusion into Distribution System	\$ 63.27	4.6							\$ 63.27	4.6
930.39	Belleville Lab	Research & Technology Development-Gen Program	\$ 244.57	17.4							\$ 244.57	17.4
930.39	Belleville Lab	Study of Water Quality Improvements	\$ 8.09	0.6							\$ 8.09	0.6
930.39	Belleville Lab	Variability of Pathogen Concentrations	\$ 44.74	3.2							\$ 44.74	3.2
930.39	Belleville Lab	Virus Detection in Ground Water	\$ 14.56	1.0							\$ 14.56	1.0
Total Service Company Charges and Hours			\$ 47,750.26	2,697.3	\$ 16,354.00	892.1	\$ 338.84	19.4	\$ 7,743.86	457.5	\$ 23,313.56	1,328.3

Massachusetts-American Water Company
Test Year Service Company Charges (Year Ended June 30, 2000) – Travel, HW/SW and Outside Services

Travel Expenses

Office	Total	Management	Attorney	CPA	Professional
		Consultant			Engineer
Corporate	\$ 4,539.96	\$ 1,460.02	\$ 6.20	\$ 63.43	\$ 3,010.31
Northeast Region	\$ 1,515.90				\$ 1,515.90
Regional Office	\$ 6,570.29	\$ 1,769.71	\$ 24.64	\$ 19.51	\$ 4,756.43
Richmond Data Center	\$ 87.24			\$ 87.24	
New England Region	\$ 1,271.64	\$ 1,464.15		\$ (192.51)	
Belleville Lab	\$ 178.24				\$ 178.24
Total	\$ 14,163.27	\$ 4,693.88	\$ 30.84	\$ (22.33)	\$ 9,460.88

Computer Hardware and Software Expenses

Vendor	Type of Services	Total	Management	Attorney	CPA	Professional
			Consultant			Engineer
AT&T	Dedicated phone lines for network connections	\$ 796.54			\$ 796.54	
IBM	Data center hardware/software fees	\$ 6,227.77			\$ 6,227.77	
JD Edwards World Solutions	Financial system software maintenance fees	\$ 2,710.66			\$ 2,710.66	
Total		\$ 9,734.97	\$ -	\$ -	\$ 9,734.97	\$ -

Outside Professional Services Fees

Outside Firm	Type of Services	Total	Management	Attorney	CPA	Professional
			Consultant			Engineer
Accountemps	Temporary accounting staff	\$ 3,716.75			\$ 3,716.75	
AON Consulting	Employee benefits consulting	\$ 129.75	\$ 129.75			
Computer Info Contractor	Software maintenance	\$ 2,578.56			\$ 2,578.56	
Detweiler Consulting	General management consulting	\$ 1,973.06	\$ 1,973.06			
Office Team	Temporary accounting staff	\$ 2,029.00			\$ 2,029.00	
Sungard Recovery Services	Programming assistance in transferring 401K application to another administrator	\$ 1,097.90			\$ 1,097.90	
Towers, Perrin	Actuarial services	\$ 906.40	\$ 906.40			
Total		\$ 8,714.67	\$ 3,009.21	\$ -	\$ 5,705.46	\$ -

OUTSIDE SERVICE PROVIDER HOURLY RATES

The next step in the cost comparison was to obtain the average billing rates for each type of outside service provider. The source of this information and the determination of the average rates are described in the paragraphs that follow.

Management Consultants

The cost per hour for management consultants was developed from the 1999 annual survey performed by the Association of Management Consulting Firms—the industry's trade organization. The first step in the calculation, presented in Schedule 4, was to determine an average rate by consultant position level. From these rates, a single weighted average hourly rate was calculated based upon the percent of time that is typically applied to a consulting assignment by each consultant position level. This represents the average for 1998, which is then escalated one year to arrive at the average for 1999—within the test year's range. This is an average for all of the United States. Consultants typically do not limit their practice to any one region and must travel to a client's location. Thus, the U.S. average is appropriate for comparison.

Attorneys

The cost per hour for attorneys was developed from an April 2000 survey conducted by the Massachusetts Lawyer's Weekly of the larger law firms in Massachusetts. These are the firms that Massachusetts-American would look to in lieu of support from Service Company attorneys. Not all firms revealed their hourly billing rates as of January 1, 2000. Those that did are listed in Schedule 5 where an average hourly rate is calculated.

Certified Public Accountants

The average hourly rate for Massachusetts certified public accountants was developed from a 1998 survey performed by the Massachusetts Society of Certified Public Accountants. The average hourly rate was calculated for a set of typical accountant positions, as shown in Schedule 6. Using an assumed percent of time on a typical assignment, a weighted average hourly rate was calculated. This survey covered hourly rates in effect during 1997 thus they had to be escalated forward to 1999.

Professional Engineers

The Service Company provided hourly rate information for two outside engineering firms with offices in Massachusetts. Both of these firms have been retained by the Service Company to perform work for Massachusetts-American in the past.

As presented in Schedule 7, an average rate was first developed for each engineering position level. Then, using a typical percentage mix of time by each engineering position that would be spent in performing engineering, operations and water quality assignments, a weighted average cost per hour was calculated.

One item that should be explained is the considerable difference in hourly rates between the two engineering firms. This occurs because Prism Environmental is used by the Service Company to perform more routine work such as main extensions and well replacements. CH2M Hill, on the other hand, is used for more complex assignments requiring greater engineering expertise. This accounts for the rate differences between the two firms. According to Service Company engineering personnel, it is appropriate to take the average of these two firms because the engineering workload that would be outsourced is about evenly split between routine and complicated work.

SCHEDULE 4

MASSACHUSETTS-AMERICAN WATER COMPANY
BILLING RATES OF U.S. MANAGEMENT CONSULTANTS

A. Calculation of Average Hourly Billing Rate by Consultant Position

(Note: survey billing rates were those in effect in 1998)

Average	Average Hourly Rates (Note A)				
	Entry-Level Consultant	Associate Consultant	Senior Consultant	Junior Partner	Senior Partner
	\$112	\$177	\$225	\$273	\$333

B. Calculation of Overall Average Hourly Billing Rate Based on a Typical Distribution
of Time on an Engagement

	Entry-Level Consultant	Associate Consultant	Senior Consultant	Junior Partner	Senior Partner	
Average Hourly Billing Rate (From Above)	\$112	\$177	\$225	\$273	\$333	
Typical Percent of Time Spent on a Consulting Project	30%	30%	20%	10%	10%	Weighted Average
	\$34	\$53	\$45	\$27	\$33	\$192

Escalation to July 31, 1999 (Note B)

CPI at December 31, 1998 163.9

CPI at December 31, 1999 168.3

Inflation/Escalation 4.4%

Billing Rate At December 31, 1999 **\$201**

Note A: source--"1999 Survey of U.S. Key Management Information," Association of Management Consulting Firms

Note B: source--US Bureau of Labor Statistics

MASSACHUSETTS-AMERICAN WATER COMPANY
BILLING RATES OF MASSACHUSETTS ATTORNEYS

Firm	Location	Number Of Mass Attorneys	Partner			Associate			Partner- Associate Average
			Low	High	Average	Low	High	Average	
Fish & Richardson	Boston	65	\$ 310	\$ 480	\$ 395	\$ 175	\$ 310	\$ 243	\$ 319
Bowditch & Dewey	Worcester	60	\$ 165	\$ 360	\$ 263	\$ 100	\$ 160	\$ 130	\$ 196
Edwards & Angell	Boston	60	\$ 225	\$ 265	\$ 245	\$ 135	\$ 220	\$ 178	\$ 211
Hinckley, Allen & Synder	Boston	51	\$ 235	\$ 395	\$ 315	\$ 150	\$ 245	\$ 198	\$ 256
Day, Berry & Howard	Boston	43	\$ 270	\$ 415	\$ 343	\$ 145	\$ 245	\$ 195	\$ 269
Sherin & Logden	Boston	43	\$ 230	\$ 400	\$ 315	\$ 140	\$ 225	\$ 183	\$ 249
Bormberg & Sunstein	Boston	35	\$ 275	\$ 395	\$ 335	\$ 135	\$ 250	\$ 193	\$ 264
Epstein, Becker & Green	Boston	30	\$ 250	\$ 465	\$ 358	\$ 150	\$ 250	\$ 200	\$ 279
Hanify & King	Boston	29	\$ 230	\$ 360	\$ 295	\$ 125	\$ 240	\$ 183	\$ 239
Rich, May, Bilodeau & Flaherty	Boston	27	\$ 210	\$ 350	\$ 280	\$ 140	\$ 220	\$ 180	\$ 230
Boyle & Morrissey	Boston	26	na	na	\$ 125	na	na	\$ 115	\$ 120
Bernkopf, Goodman & Baseman	Boston	24	\$ 240	\$ 350	\$ 295	\$ 165	\$ 230	\$ 198	\$ 246
LeBoeuf, Lamb, Greene & McCrae	Boston	24	\$ 290	\$ 400	\$ 345	\$ 165	\$ 275	\$ 220	\$ 283
Lawson & Weitzen	Boston	22	\$ 175	\$ 300	\$ 238	\$ 75	\$ 150	\$ 113	\$ 175
Ardiff & Morse	Danvers	20	\$ 175	\$ 225	\$ 200	\$ 95	\$ 175	\$ 135	\$ 168
Lyne, Woodworth & Evarts	Boston	20	\$ 225	\$ 300	\$ 263	\$ 125	\$ 150	\$ 138	\$ 200
Cain, Hibbard, Myers & Cook	Pittsfield	19	\$ 175	\$ 255	\$ 215	\$ 120	\$ 175	\$ 148	\$ 181
Tarlow, Breed, Hart, Murphy & Rodgers	Boston	19	na	na	\$ 290	na	na	\$ 210	\$ 250
Cushing & Dolan	Boston	18	\$ 175	\$ 210	\$ 193	na	na	\$ 165	\$ 179
Looney & Grossman	Boston	18	\$ 175	\$ 350	\$ 263	\$ 125	\$ 230	\$ 178	\$ 220
		Average	\$ 278			\$ 175			\$ 227

Source: Massachusetts Lawyers Weekly, 100 Largest Law Firms In Massachusetts (April 24, 2000)

**MASSACHUSETTS-AMERICAN WATER COMPANY
BILLING RATES OF MASSACHUSETTS CERTIFIED PUBLIC ACCOUNTANTS**

A. Calculation of Average Hourly Billing Rate by Public Accounting Position (Note: survey billing rates were those in effect in 1997)				
Type of Firm	Average Hourly Billing Rate (Note A)			
	Staff Accountant	Senior Accountant	Manager	Partner
Larger Firms	\$60	\$76	\$103	\$169
Medium-Sized Firms	\$65	\$93	\$74	\$134
Average Hourly Rate	\$63	\$85	\$89	\$152
B. Calculation of Overall Average Accountant Billing Rate Based Upon Typical Distribution of Time on an Engagement				
Average Hourly Billing Rate (From Above)	Staff Accountant	Senior Accountant	Manager	Partner
	\$63	\$85	\$89	\$152
Typical Percent of Time Spent on an Accounting Assignment				Weighted
	30%	30%	20%	20%
	\$19	\$25	\$18	\$30
Escalation to December 31, 1999				
CPI at December 31, 1997				161.3
CPI at December 31, 1999				168.3
Inflation/Escalation				7.0%
Estimated Average Hourly Billing Rate For Massachusetts CPAs At 12/31/99				\$99

Note A: source is "1998 Accounting Practice Survey," Massachusetts Society of CPAs

Note B: source is US Bureau of Labor Statistics

**MASSACHUSETTS-AMERICAN WATER COMPANY
BILLING RATES OF MASSACHUSETTS ENGINEERS**

Note: Billing rates were those in effect in 1999

A. Calculation of Average Hourly Rate by Engineer Position

Name of Firm	Average Hourly Billing Rates			
	CAD Technician	Engineer	Sr. Proj Engineer	Officer
	Support Staff	Design Engineer Project Engineer	Sr. Engineer	Principal Engineer Sr. Associate
CH2M Hill Brotten, MA	\$81 (\$68-\$93)	\$90 (\$77-\$103)	\$130 (\$124-\$135)	\$160 (\$150-\$170)
Prism Environmental Westborough, MA	\$36	\$51 (\$43-\$60)	\$74 (\$68-\$80)	\$96
Overall Average	\$58	\$71	\$102	\$128

B. Calculation of Overall Average Engineering Hourly Billing Rate

	CAD Technician	Engineer	Sr. Proj Engineer	Officer	
	Support Staff	Design Engineer Project Engineer	Sr. Engineer	Principal Engineer Sr. Associate	
Average Hourly Billing Rate (From Above)	\$58	\$71	\$102	\$128	
Typical Percent of Time on an Engineering Assignment	30%	35%	25%	10%	Weighted Average
	\$17	\$25	\$25	\$13	\$80

Source: Information provided by American Water Works Service Company

SERVICE COMPANY VERSUS OUTSIDE PROVIDER COST COMPARISON

As shown in the table below, Service Company costs per hour are considerably lower than those of outside providers.

Outside Provider	1999 Cost Per Hour		Difference-- Service Co. Greater (Less Than) Outside Provider
	Service Company	Outside Provider	
Management Consultant	\$ 76	\$ 201	\$ (125)
Attorney	\$ 147	\$ 227	\$ (80)
Certified Public Accountant	\$ 45	\$ 99	\$ (54)
Professional Engineer	\$ 77	\$ 80	\$ (3)

Based on these cost per hour differentials and the number of hours that the Service Company billed Massachusetts-American during the year ended June 30, 2000, the services themselves would cost significantly more—over \$831,000—from outside providers (see table below). Thus, on average, outside provider's hourly rates are over 92% higher than those of the Service Company (\$1,731,203/\$899,437).

Dollar Difference Associated With Contracting Service Co Services

Outside Provider	Rate Difference-- Service Company Greater(Less) Than		Hours	Dollar Difference
	Outside Provider	Outside Provider		
Management Consultant	\$	(125)	3,056	\$ (381,938)
Attorney	\$	(80)	57	\$ (4,560)
Certified Public Accountant	\$	(54)	8,095	\$ (437,130)
Professional Engineer	\$	(3)	2,713	\$ (8,138)
Total Service Company Less Than Outside Providers				\$ (831,766)

Higher hourly rates are not the only negative economic impact that would result from contracting all Service Company services to outside providers. Managing outside firms who would perform over 16,000 hours of work would add a considerable workload to the existing Massachusetts-American management team. Thus, it would be necessary for Massachusetts-American to add one position whose responsibility it would be to supervise the outside firms and ensure they delivered quality services. The individual that would fill this position would need a good understanding of each profession being managed. This person must also have management experience and the authority necessary to give them credibility with the outside firms. As calculated in the table below, this position would add another \$98,800 per year to Massachusetts-American's personnel expenses.

Cost of Adding Administrative Position To The Staff Of Massachusetts-American

New Position's Salary	\$ 65,000
Benefits (Assume 52%)	<u>33,800</u>
Total Cost of the New Position	<u>\$ 98,800</u>

Thus, the net effect on the ratepayers of Massachusetts-American of contracting all services now provided by Service Company would be an increase in their costs of **\$930,566** (\$831,766+ \$98,800).

OTHER COST COMPARISONS

The Service Company periodically conducts its own comparisons of the cost of outside service providers. In all instances, these comparisons confirm this study's conclusion--that the cost of outsourcing Service Company services is greater than the current arrangement. A brief description of several recent studies is provided below.

- Belleville Lab Testing - A comparison was made of Belleville Lab 1998 cost for performing over 40 major tests to the cost of using outside testing laboratory. It was found that the outside labs were 53% more expensive than the Belleville Lab.
- Insurance Premiums – In an October 8, 1999 letter to the Service Company, the corporation's insurance consultant indicated that the premiums paid by another American Water Works operating company for property and excess liability insurance would be 131% higher $(\$141,540 + \$35,000) / (\$46,390 + 20,838)$ if the policies were purchased separately and not as part of the American Water Works' national plan.

These studies present further evidence that the Service Company arrangement is the lowest-cost alternative for Massachusetts-American.

IV - NEED FOR SERVICES

ANALYSIS OF SERVICES

The second issue addressed by this study is the need for the services that are rendered to Massachusetts-American by the Service Company. First, it was determined specifically what the Service Company does for Massachusetts-American. Based on discussions with Service Company personnel, the matrix in Schedule 7 was created showing which entity--Massachusetts-American or a Service Company location--is responsible for each of the functions Massachusetts-American requires to ultimately provide service to its customers. This matrix was reviewed to determine: (1) if there was redundancy or overlap in the services being provided by the Service Company and (2) if Service Company services are typical of those needed by a stand-alone water utility.

Upon review of Schedule 8, the following conclusions can be drawn:

- There is no redundancy or overlap in the services provided by the Service Company to Massachusetts-American. For substantially all of the services listed in Schedule 8, there was only one entity that was primarily responsible for the service.
- The services that the Service Company provides would be necessary even if Massachusetts-American were a stand-alone water utility.

**MASSACHUSETTS-AMERICAN WATER COMPANY
DESIGNATION OF RESPONSIBILITY FOR WATER UTILITY FUNCTIONS**

Water Company Function	Primarily Responsible <input checked="" type="checkbox"/> Provides Input <input type="checkbox"/>	Performed By					
		Mass-American	American Water Works Service Company				
			Northeast Office	N.England Office	Marlton, NJ Acctg Office	Corporate Office	Data Centers
<u>Engineering and Construction Management</u>							
CPS Preparation			<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Five-Year System Planning	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
Engineering Standards & Policies Development						<input checked="" type="checkbox"/>	
Project Design							
Major Projects (e.g., new treatment plant)	<input type="checkbox"/>		<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Special Projects	<input type="checkbox"/>		<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Minor Projects (e.g., pipelines)	<input checked="" type="checkbox"/>						
Construction Project Management							
Major Projects	<input type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Special Projects	<input type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Minor Projects	<input checked="" type="checkbox"/>						
Developers Extensions	<input checked="" type="checkbox"/>						
Tank Painting			<input checked="" type="checkbox"/>				
<u>Water Quality and Purification</u>							
Water Quality Standards Development			<input type="checkbox"/>				<input checked="" type="checkbox"/>
Research Studies	<input type="checkbox"/>		<input type="checkbox"/>				<input checked="" type="checkbox"/>
Water Quality Program Implementation	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
Water Treatment Operations & Maintenance	<input checked="" type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	
Compliance Sampling	<input checked="" type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>
Testing/Other Sampling	<input type="checkbox"/>		<input type="checkbox"/>				<input checked="" type="checkbox"/>

**MASSACHUSETTS-AMERICAN WATER COMPANY
DESIGNATION OF RESPONSIBILITY FOR WATER UTILITY FUNCTIONS**

Water Company Function	Performed By						
	Mass-American	American Water Works Service Company					
		Northeast Office	N.England Office	Marlton, NJ Acctg Office	Corporate Office	Data Centers	Belleville Lab
<u>Transmission and Distribution</u>							
Preventive Maintenance Program Development	■				■		
System Maintenance	■						
Leak Detection	■						
<u>Customer Service</u>							
Customer Contact	□				□		
Community Relations	■	□					
Meter Reading	■						
Customer Bill Preparation						■	
Bill Collection			■				
Customer Payment Processing			■				
Meter Standards Development					■		
Meter Testing, Maintenance & Replacement	■						
<u>Financial Management</u>							
Financial Planning	□	■					
Financings--Equity					■		
Financings--Long Term Debt					■		
Short Term Lines of Credit Arrangements		■			■		
Investor Relations					■		
Insurance Program Administration					■		
Loss Control/Safety Program Administration	□	■			■		
Pension Fund Asset Management					■		
Cash Management/Disbursements					■		
<u>Internal Auditing</u>				□	■		

**MASSACHUSETTS-AMERICAN WATER COMPANY
DESIGNATION OF RESPONSIBILITY FOR WATER UTILITY FUNCTIONS**

Water Company Function	Mass-American	Performed By					
		American Water Works Service Company					
		Northeast Office	N.England Office	Marlton, NJ Acctg Office	Corporate Office	Data Centers	Belleville Lab
<u>Budgeting and Variance Reporting</u>							
Corporate Guidelines & Instructions		■			■		
Regional Guidelines & Instructions		■					
Budget Preparation--Revenue, O&M, Depreciation, Interest Expense	□	■					
Budget Preparation—Service Co. Charges		■			□		
Capital Budget Preparation—Projects		■			□		
Capital Budget Preparation--Non-Project Wk	■	□					
Prepare Monthly Budget Variance Report ("Budget/Plan Analysis")	■						
Prepare Capital Project Budget Status Report		■					
Year-End Projections (A)	■	■					
<u>Accounting and Taxes</u>							
Accounts Payable Accounting				■			
Payroll Accounting				■			
Work Order Accounting	□			■			
Fixed Asset Accounting				■			
Journal Entry Preparation	□			■			
Financial Statement Preparation				■			
State Commission Reporting				■			
Income Taxes--State				■			
Income Taxes--Federal				■	□		
Property Taxes				■			
Gross Receipts Taxes				■			

Note A: Projections are developed for certain cost types by Massachusetts-American and by the Service Company for other cost types.

**MASSACHUSETTS-AMERICAN WATER COMPANY
DESIGNATION OF RESPONSIBILITY FOR WATER UTILITY FUNCTIONS**

Water Company Function	Primarily Responsible <input checked="" type="checkbox"/> Provides Input <input type="checkbox"/>	Performed By					
		Mass-American	American Water Works Service Company				
			Northeast Office	N.England Office	Marlton, NJ Acctg Office	Corporate Office	Data Centers
<u>Rates</u>							
Rate Studies & Tariff Change Administration			<input checked="" type="checkbox"/>				
Rate Case Planning	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
Rate Case Administration			<input checked="" type="checkbox"/>				
Commission Inquiry Response	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
<u>Legal</u>			<input checked="" type="checkbox"/>				
<u>Purchasing and Materials Management</u>							
Specification Development	<input type="checkbox"/>		<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Bid Solicitation	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
Contract Administration	<input type="checkbox"/>		<input checked="" type="checkbox"/>			<input type="checkbox"/>	
Ordering	<input checked="" type="checkbox"/>						
Inventory Management	<input checked="" type="checkbox"/>						
<u>Human Resources Management</u>							
Benefit Program Development						<input checked="" type="checkbox"/>	
Benefits Program Administration			<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Management Compensation Administration						<input checked="" type="checkbox"/>	
Wage & Salary Program Design						<input checked="" type="checkbox"/>	
Wage & Salary Administration			<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Labor Negotiations--Wages	<input checked="" type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	
Labor Negotiations--Benefits			<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Labor Negotiations-- Work Rules	<input checked="" type="checkbox"/>		<input type="checkbox"/>				
Training Program Development			<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Training--Course Delivery (B)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
Affirmative Action/EEO--Plan Development			<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Affirmative Action/EEO--Implementation				<input checked="" type="checkbox"/>			

Note B: Massachusetts-American personnel conduct technical/craft-related training where as Service Company personnel conduct supervisory and professional training

**MASSACHUSETTS-AMERICAN WATER COMPANY
DESIGNATION OF RESPONSIBILITY FOR WATER UTILITY FUNCTIONS**

Water Company Function	Performed By					
	Mass-American	American Water Works Service Company				
		Northeast Office	N.England Office	Marlton, NJ Acctg Office	Corporate Office	Data Centers
<u>Information Systems Services</u> Haddon Heights, NJ and Richmond, IN Mainframe Computers System Operations & Maintenance Software Maintenance Network Installation Network Administration Workstation Acquisition & Setup Help Desk		<div> <div></div> <div></div> <div></div> <div></div> </div>				<div> <div></div> <div></div> </div>

CONTROLS OVER SERVICE COMPANY CHARGES

Several factors were noted that act to control the level of charges from the Service Company to Massachusetts-American. The most significant of these are described below.

- **Service Company Budgets By Operating Company** - The budget for each Service Company location is allocated to each operating company so it knows what to expect in the way of charges during the next year. Each operating company president must review and approve the budgeted Service Company charges for the upcoming year.
- **Budget Variance Reporting (Service Company)** - A summary and explanation of year-to-date budget variances is prepared for the entire Service Company on a monthly basis. In addition, a monthly variance report called the "Statement of Expenses and Billed Charges," is produced by Service Company location and shows budget versus actual spending for the month and year-to-date by cost category.
- **Budget Variance Reporting (Operating Company)** - The "Budget/Plan Analysis" produced monthly by each operating company has a line item for Service Company charges. In this way, Service Company budget versus actual charges can be monitored for the month and year-to-date.
- **Service Company Bill Detail** - The monthly Service Company bill is accompanied by detailed backup to support all charges by each Service Company location. Massachusetts-American's Vice President and Manager, who reviews the reasonableness of all charges, scrutinize this detail. Items that appear unusual are noted to the Regional VP of Accounting, who investigates them and, if necessary, makes a correcting journal entry.
- **Capital Project Authorization** - Capital projects estimated to cost over \$100,000 must be approved by the operating company board of directors before any design and construction work begins.